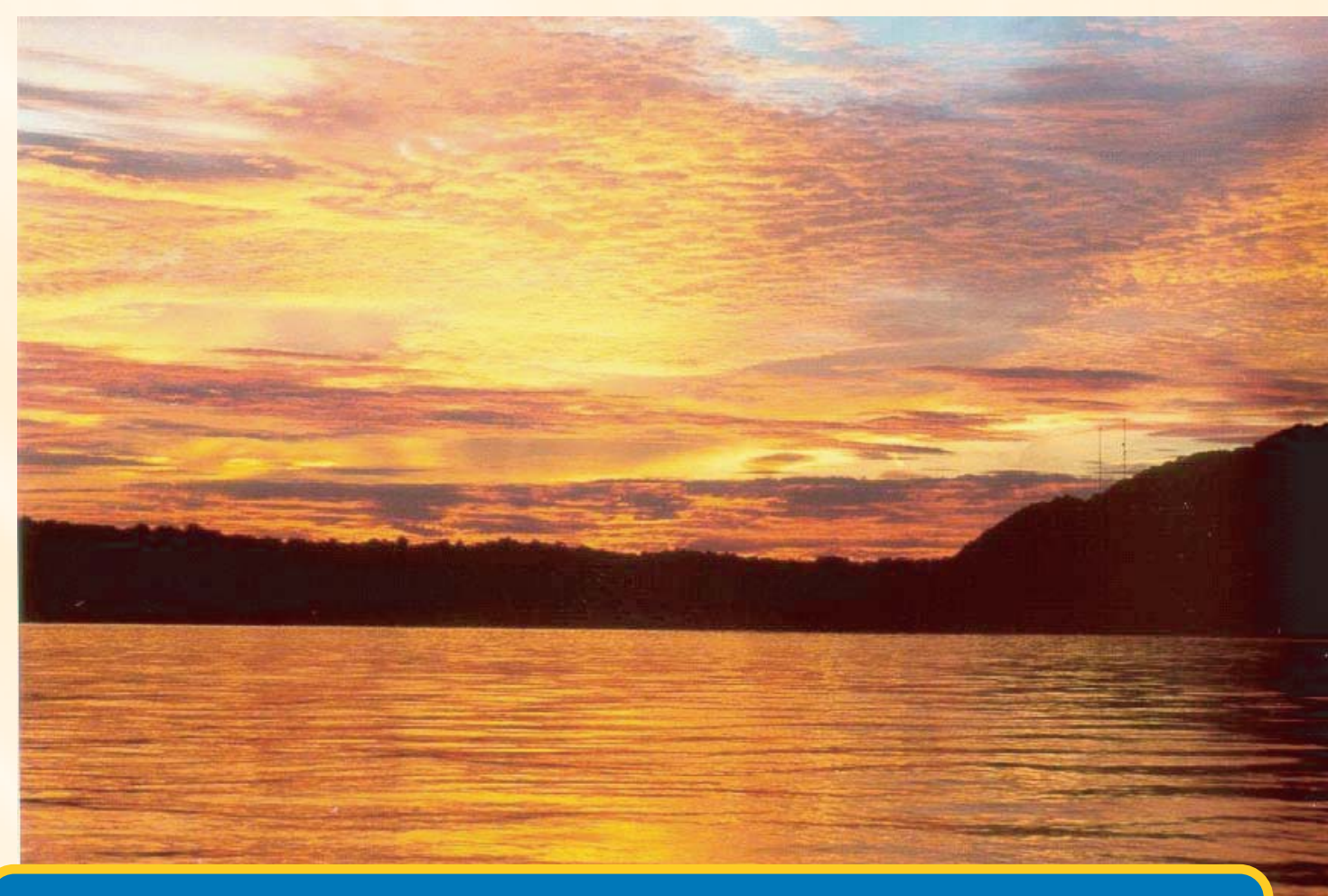
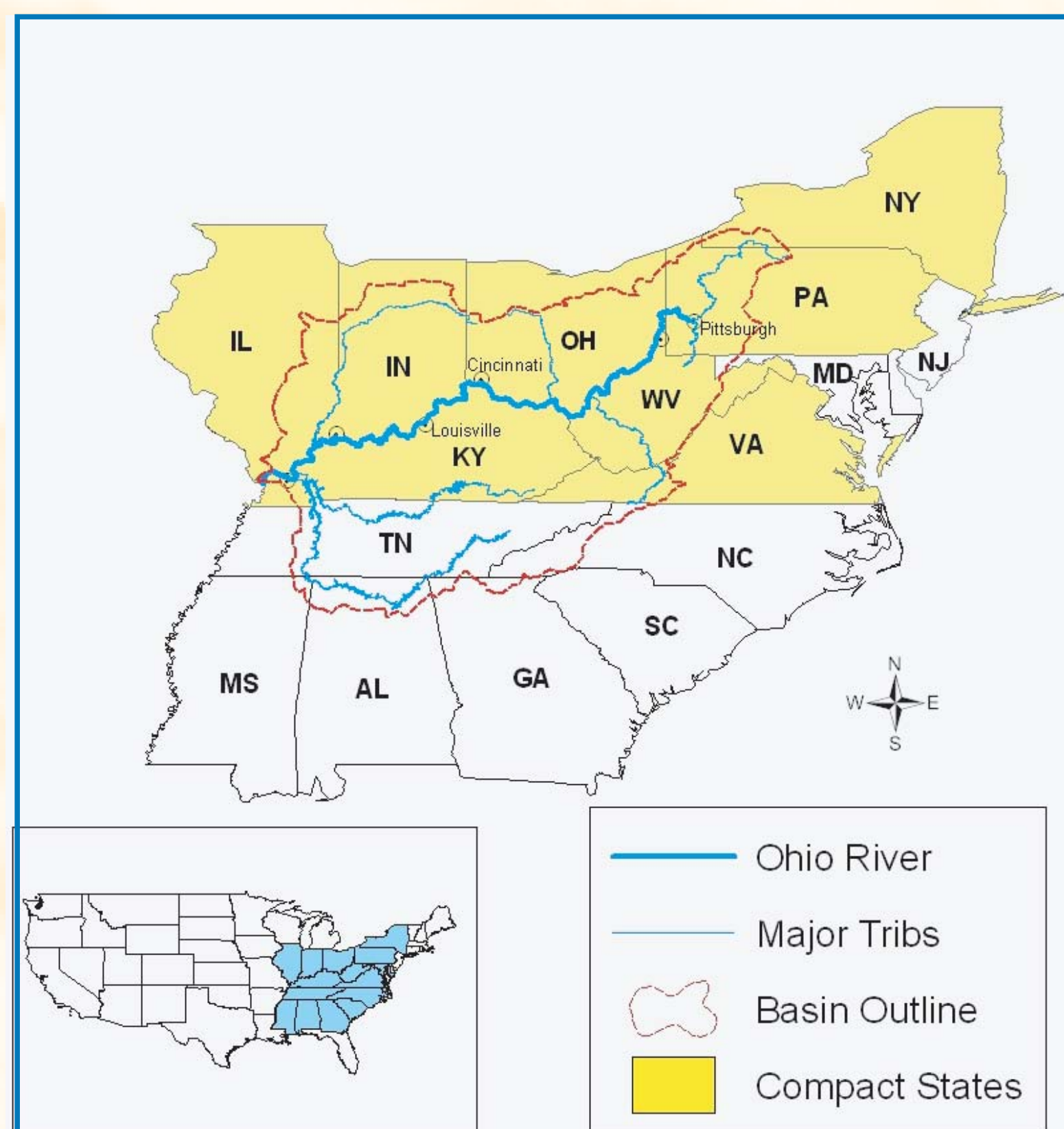


# Comparison of Random Site Selection at Multiple Intensities for Assessment of the Ohio River Fish Community

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The Ohio River Valley Water Sanitation Commission (ORSANCO) is a compact of 8 states representing interests in the Ohio River basin. This organization has been instrumental in the development of biological monitoring of the Ohio River.



## Issue:

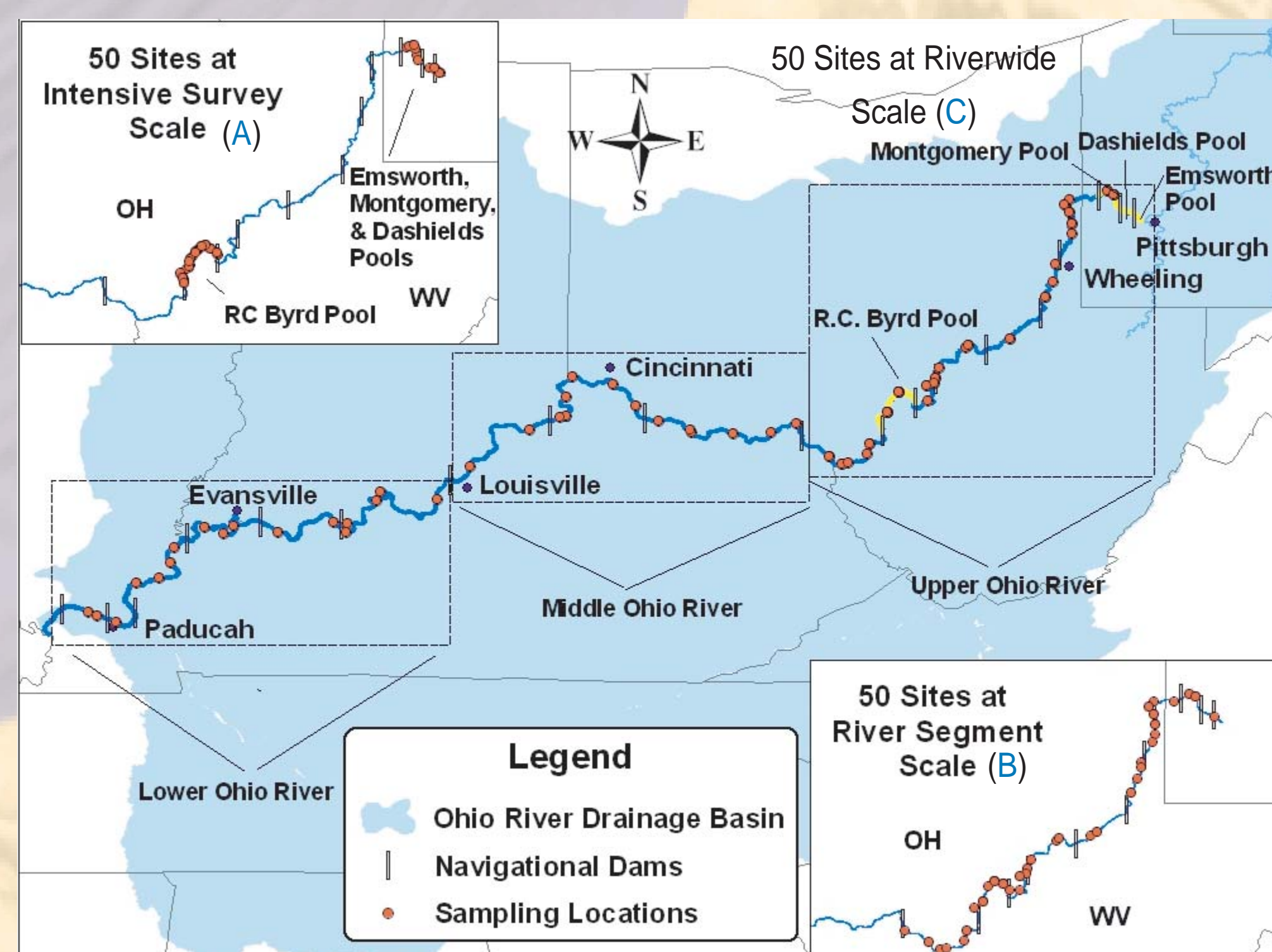
In the past, ORSANCO has conducted time-consuming intensive surveys by sampling every few miles along the Ohio River to estimate condition of the biological resources. These surveys may have represented an excessive effort in the field.

## Objective:

To investigate the applicability of a random site selection approach to reduce field sampling effort in assessing the Ohio River fish community. The random design also allows for assessment of biological condition with known confidence.

## Approach:

- In 2002, 50 sites selected randomly for sampling at each of three different scales: Combined Emsworth, Dashields, Montgomery, R.C. Byrd pools (EDMB) (A-intensive survey scale), Upper river (B-river segment scale), and riverwide (C-riverwide scale).
- In 2003, 50 sites each selected randomly in the Lower (B), Middle (B), and Upper (B) segments of the Ohio, and 50 sites riverwide (C).



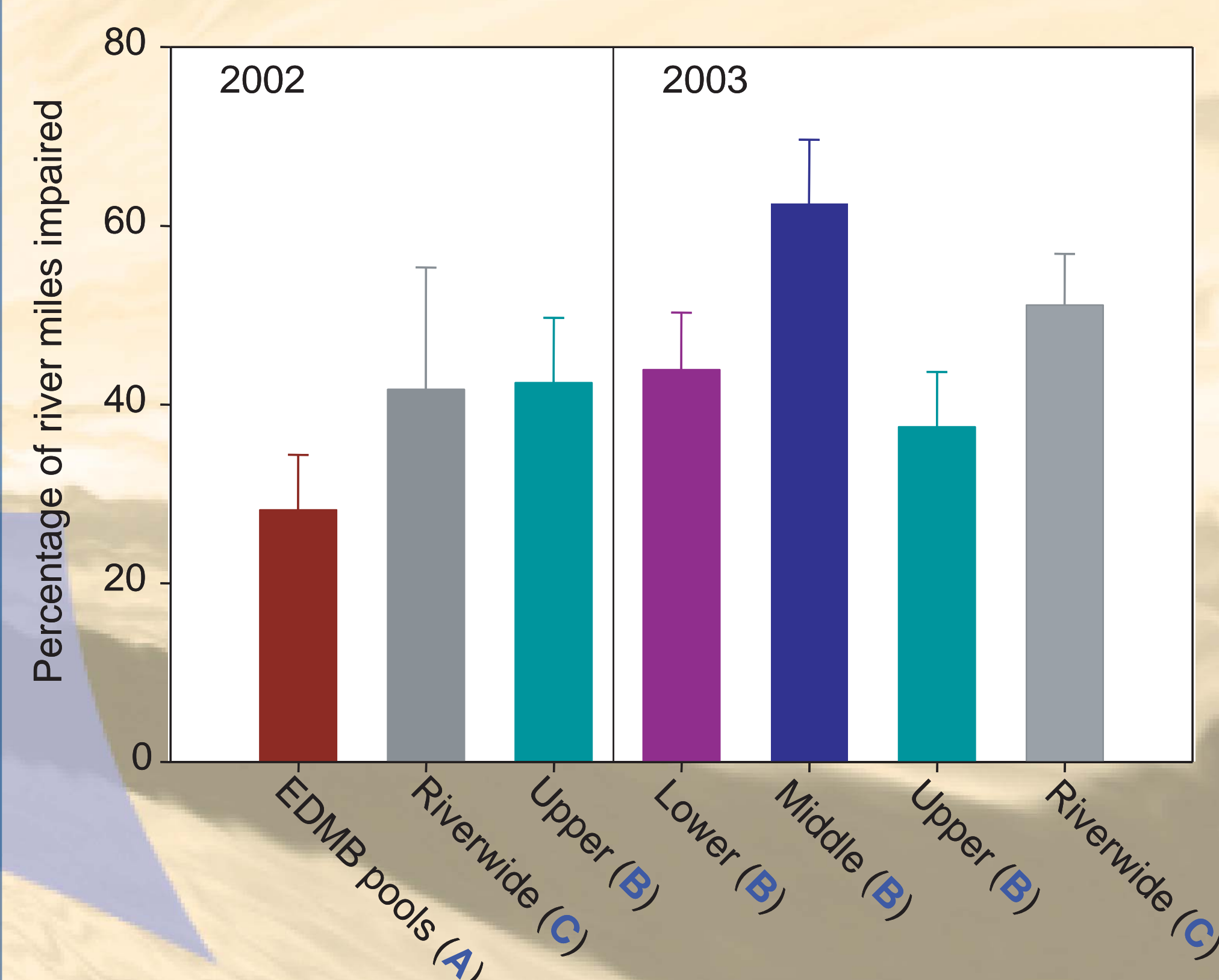
## Funding:

Provided by Region 3 through a Regionally Applied Research Effort (RARE) grant



## Contributions by other collaborators:

- The random site selection for this study was provided by the National Health and Environmental Effects Research Laboratory (NHEERL).
- Data analysis was provided by the National Exposure Research Laboratory (NERL).



## Conclusions:

- The lower intensity random site selection approach considerably reduced sampling effort, while providing an assessment with a known level of confidence.
- Although condition estimates differed, the level of confidence in results was similar among the three scales of sampling intensity.

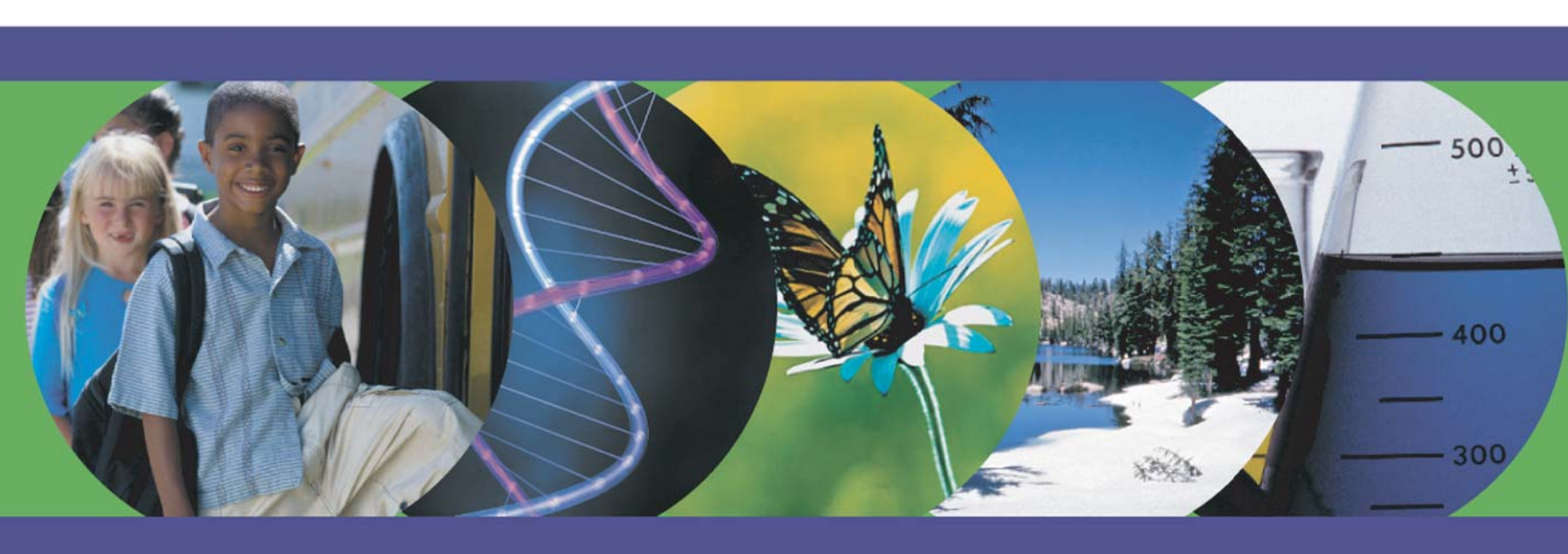
## Outcome:

ORSANCO will be using random site selection in the future to conduct biological assessments of the Ohio River, allowing it to make the most efficient use of its resources.

Although this work was reviewed by EPA and approved for publication, it may not necessarily reflect official Agency policy.



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